

6
Claims

1. Transgenic oilseed plant cell containing a DNA construct comprising in the 5' to 3' direction of transcription operably linked a promoter region directing transcription to the seed of the oilseed plant, a nucleotide sequence coding for a transit peptide directing the translated fusion polypeptide to the chloroplast of the oilseed plant, a 5'-truncated beta-carotene C-4-oxygenase gene from the alga *Haematococcus pluvialis* and a transcriptional termination region.

2. Transgenic oilseed plant cell according to claim 1, wherein the cell additionally contains at least one DNA construct selected from DNA constructs comprising in the 5' to 3' direction of transcription operably linked a promoter region directing transcription to the seed of the oilseed plant, a nucleotide sequence coding for a transit peptide directing the translated fusion polypeptide to the chloroplast of the oilseed plant, a nucleotide sequence coding for at least one peptide with enzyme activity necessary for keto group containing xanthophyll production and esterification in the oilseed plant and a transcriptional termination region.

3. Transgenic oilseed plant cell according to claim 1 or 2, wherein the promoter is a napin promoter, the peptide with enzyme activity necessary for keto group containing xanthophyll production and esterification is selected from the group consisting of peptides with, 1-D-deoxyxylulose 5-phosphate synthase, isopentenyl pyrophosphate:dimethylallyl pyrophosphate isomerase, geranylgeranyl pyrophosphate synthase, phytoene synthase, phytoene desaturase, zeta-carotene desaturase, lycopene beta-cyclase, β -carotene hydroxylase, and acyl transferase activity.

4. Transgenic oilseed plant cell according to claim 1, wherein the nucleotide sequence of the DNA construct is SEQ ID NO:1.

5. Transgenic oilseed plant cell according to any one of claims 1 - 5, wherein the oilseed plant is selected from the group consisting of rape, sunflower, soybean and mustard.

6. Transgenic oilseed plant cell according to any one of claims 1 - 5, wherein the cell expresses xanthophylls.

7. Transgenic oilseed plant cell according to claim 6, wherein a xanthophyll is canthaxanthin.

8. Transgenic oilseed plant cell according to claim 6, wherein a xanthophyll is astaxanthin.

9. Transgenic oilseed plant cell according to claim 8, wherein the astaxanthin comprises astaxanthin esters.

AMENDED SHEET